

REMARKS

The Examiner's remarks have been carefully considered and the prior patents cited and applied have been carefully studied.

Applicant has canceled claims 2-7, 12, 14-19, and 26-34 and has amended claims 1, 8, 9, 13, 20, 21 and 43 without any intention of acquiescing the pertinency of the prior patents but rather to eliminate possible ambiguities and to clearly state applicant's invention.

Claims 1, 8-11, 13, 20-25 and 35-45 remain in this application.

It is believed that with the cancellation and amendment of some of the claims in the application, no additional filing fee is necessary. However, should there be an additional filing fee or any other charge in connection with this amendment, please charge our Deposit Account No. 03-2468.

Applicant believes that the claims as amended now remove the Examiner's objections to all the claims as being indefinite.

With respect to the Examiner's comment on claim 24, applicant cannot find the portions of that claim which the Examiner refers to. Clarification is respectfully requested.

With respect to the rejection to the drawings, the Examiner will note that the claims have been changed to reflect the fact that the keys have edge and side walls and that each of the walls has an end edge with the end edges tangent to the curved outer wall of the vial. This is clearly shown in Figs. 7, 10, 13, and 17. The Examiner will note that the end edges of the walls 57 and 58 are tangent to the outer cylindrical surface of the vial 3. Hence, applicant respectfully submits that no change in the drawings is necessary and the claims now reflect structure that is clearly shown in the drawings.

The Examiner has indicated that claim if 20 were rewritten in independent form to include all the limitations of the parent claims, the claims would be allowable. Applicant has rewritten this claim in independent form. Hence, allowance of this claim 20 (together with dependent claims 21 to 25) is respectfully requested.

In the Examiner's Office Action of July 2, 2001, the Examiner indicated that claims 43-45 and 9-12 would be allowable if rewritten in independent form. This was done by the applicant in response to that Office Action. These claims have now again been rejected on indefiniteness. Applicant submits that these claims have now been amended to remove the Examiner's objections as to indefiniteness and since no prior art has been cited against these claims, applicant respectfully requests that claims 43-45 and 9-12 now be allowed.

Reconsideration of the rejection is respectfully requested.

Applicant's invention is directed to a vial and the method of making the vial. The outer walls of the vial are straight and cylindrical but the inner cavity is curved. The curved inner cavity and the cylindrical outer wall of the vial are formed simultaneously and in a single step with a mold having a straight walled outer portion and a curved inner portion. The Examiner will appreciate that by this method the vial may be made with automatic machinery in a single step rather than in multiple steps.

In addition since the vial inner cavity is curved and the vial outer surface is cylindrical, it becomes essential to properly orient the vial in a level in order to ensure that the vial is placed at proper location and orientation on a level so that the bubble within the vial will clearly indicate whether a particular surface is straight or not. Without any orienting means it cannot be certain that the vial is properly oriented with the curved inner cavity in the proper position so as to give accurate results. In applicant's structure, the orienting means comprise keys 57 which are located adjacent the open end of the vial. These keys permit the vial to be properly inserted in receiving

notches in the level web 51 in order to ensure that the curved inner cavity is properly orientated with respect to the level. Failure to mount the vial in its proper orientation will result in inaccurate readings.

Applicant believes that the amended claims are now directed to this structure which is not shown in any of the prior patents either alone or in combination with each other.

Swedish Patent No. 148,436 shows a vial having a curved interior cavity and a straight outer wall. However, this patent does not show a vial which has a closed end wall with parallel inner and outer faces which are perpendicular to the outer cylindrical wall. Moreover, this patent does not show any means for orienting this cylindrical vial so as to assure that it is properly placed in a level with the inner cavity at the proper orientation to give accurate readings. Hence, this patent does not anticipate.

Johnson Patent No. 3,750,301 shows a vial having a curved outer surface as well as a curved inner surface. This structure is quite different from applicant's structure. The web in this patent is the portion where the opening 2 is located and not the portion marked 6 in the drawing. The side walls 8 and 9 the Examiner refers to are not the walls of the vial, but the side walls of a separate vial holder 4 into which the vial is inserted. Examiner refers to keys 14---but these keys do not extend from the vial nor are they integral with the vial. They are part of the vial holder 4. Parallel rails 7 and web 6 referred to by the Examiner are not the rails and web of the level but of the separate vial holder 4. Hence, this patent is totally different from applicant's structure and does not anticipate.

Hutchins Patent No. 5,199,177 merely shows notches in a level web for receiving a vial. The vial in this patent does not have an inner curved cavity and an outer straight wall. The inner cavity is straight walled. None of the other features of applicant's invention are disclosed in this patent. Hence, this patent does not anticipate.

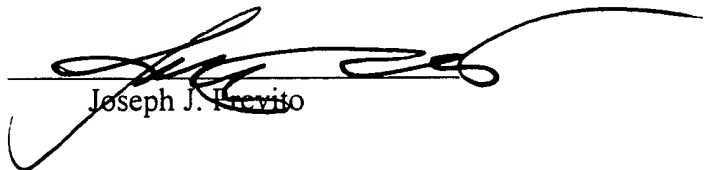
The Examiner has suggested the combination of the *Swedish* and *Johnson* patents and has rejected some of the claims as being rendered obvious by the combined references. Applicant submits that even when combined, the references do not render applicant's invention obvious. Nothing the *Swedish* nor *Johnson* patents have any orienting device integral with the outer walls of the vial to ensure proper orientation. Moreover, the *Swedish* patent does not show the vial having an end wall which has straight parallel inner and outer faces perpendicular to the outer cylindrical surfaces. Hence, the combination of these references would result in a structure lacking these features. Therefore, the combined references would not render applicant's invention obvious.

The Examiner has also suggested the combination of the *Hutchins* and *Swedish* patents and has rejected some of the claims as being rendered obvious by the combined references. Applicant submits that even when combined, the references would not render applicant's invention obvious. Neither *Hutchins* nor the *Swedish* patent have an orienting device integral with the outer wall of the vial to permit proper orientation in a level. Neither patent shows a vial having a curved inner cavity with an end wall which has straight parallel faces inner and outer faces perpendicular to the outer cylindrical surface. These features would be missing from the combination of references suggested by the Examiner and hence the combined references would not render applicant's invention obvious.

Reconsideration of the rejection of method claims 35-42 is respectfully requested. The Examiner states that it is normal manufacturing practice for the method steps to be practiced as claimed in these claims. The Examiner also states that any cylindrically shaped structure can be made by simultaneously making the inner and outer surfaces. In the first place the Examiner does not cite any prior patents to support the rejection of these claims. Secondly, the simultaneous formation of the vial with an outer cylindrical surface and an inner curved surface is critical because it is only by forming them simultaneously by applicant's method that proper orientation and location of the inner curved cavity in relation to the outer cylindrical surface can be assured in any vial that is made. If the vial were made in two steps (e.g. first form a vial and thereafter drill a curved cavity in the vial), not only would this be expensive and time consuming but there is no assurance that each of the vials will have the exact same structural dimensions and relative orientations. Applicant's method of making the vial with an outer cylindrical surface and an inner curved cavity simultaneously in one step assures that all vials made by this method would be identical so that once the vial is placed in a level, the user is assured that the vial will give accurate readings. Hence, applicant's method is both critical and novel and not shown in any of the prior patents.

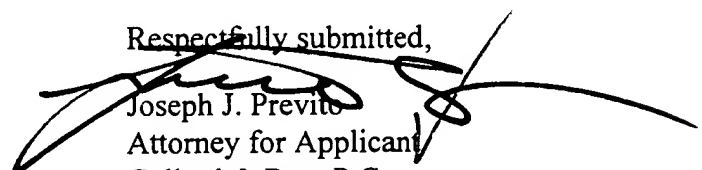
Since none of prior patent either alone or in combination with each other anticipate applicant's invention nor render applicant's invention nor render applicant's invention obvious, allowance of the application is respectfully requested.

Dated: June 25, 2002
I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on June 25, 2002.



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Respectfully submitted,



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COPY OF CLAIMS MARKED UP TO SHOW CHANGES MADE

1. (Amended) A vial for a level, said vial comprising an outer wall, said outer wall being straight and cylindrical, an inner cavity, said inner cavity being curved, said inner cavity being curved in a substantially uniform arc having an apex, opposed ends spaced from the apex and opposed spaced sides, planes tangent to said opposed spaced sides are at an angle of 90 degrees from the apex, the apex of the curved inner cavity being closer to the cylindrical outer wall of the vial than the opposed ends of the inner cavity, said inner cavity is substantially uniform in cross section throughout its length, planes tangent to the sides of the cavity are parallel to each other and at right angles to a plane tangent to said apex, one end of said cavity terminates in an end wall perpendicular to the said outer wall, said end wall having inner and outer faces parallel to each other, the other end of said cavity is open and wherein a cap is adapted to close the said open end, and orienting means integral with said outer walls to permit proper orientation and mounting of the vial in a level.

8. (Amended) A vial as set forth in claim [6], 1 wherein [the other end of cavity is open and] said orienting means comprise a pair of keys which extend from and are integral with the outer wall of said vial adjacent said open end, said keys extending in opposite directions from each other.

9. (Twice Amended) A vial comprising an outer wall, said outer wall being straight and cylindrical, an inner cavity, said inner cavity being curved, said inner cavity being curved in a substantially uniform arc having an apex, opposed ends spaced from the apex and opposed spaced sides at an angle of 90 degrees from the apex, the apex of the curved inner cavity is closer to the cylindrical outer wall of the vial than [that] the opposed ends of the inner cavity, the said cavity is substantially uniform in cross section throughout its length, planes tangent to the sides of the cavity are parallel to each other and at right angles to a plane tangent to said apex, one end of said cavity terminates in an end wall, the other end of said cavity it open and wherein a cap is adapted to close the said open end, [the other end of said cavity is open and] a pair of keys extend from the outer wall of said vial adjacent said open end, said keys extending in opposite directions from each other, each of said keys have edge and side walls at right angles to each other, each of said walls having an end edge, said end edges being tangent to the outer wall of the vial with one of said walls being parallel to the plane tangent to the apex of the cavity.

13. (Twice Amended) A level having a pair of opposed parallel rails, a web perpendicular to said rails and connecting the rails together, a vial-receiving opening in said web, said vial-receiving opening having opposed notches therein, said opposed notches having an end wall and spaced side walls at right angles to said end wall, at least one vial mounted in said vial-receiving opening, the opposed ends of the vial being mounted in the opposed notches, said vial comprising an outer wall, said outer wall being straight and cylindrical, an inner cavity within said vial, said inner cavity being curved, and orienting means are provided in said outer wall to permit proper orientation and mounting of said vial in the notches in said vial-receiving opening, the inner cavity is curved in a substantially uniform arc having an apex, opposed ends spaced from the apex and opposed spaced sides at an angle of 90 degrees from the apex, the apex of the curved inner cavity

is closer to the cylindrical outer wall of the vial than the ends of the inner cavity and wherein a plane tangent to said apex is parallel to said rails, the said cavity is substantially uniform in cross section throughout its length, planes tangent to the sides of the cavity are parallel to each other and at right angles to a plane tangent to said apex, one end of said cavity terminates in an end wall perpendicular to said outer wall, said end wall having inner and outer faces parallel to each other the other end of said cavity is open and wherein a cap is adapted to close the said open end, said orienting means comprise a pair of keys [extend] extending from and integral with the outer wall of said vial adjacent said open end, said keys extending in opposite directions from each other, said keys adapted to be received in the opposed notches.

20. (Twice Amended) A level [as set forth in claims 19, wherein] having a pair of opposed parallel rails, a web perpendicular to said rails and connecting the rails together, a vial-receiving opening in said web, said vial-receiving opening having opposed notches therein, said opposed notches having an end wall and spaced side walls at right angles to said end wall, at least one vial mounted in said vial-receiving opening, the opposed ends of the vial being mounted in the opposed notches, said vial comprising an outer wall, said outer wall being straight and cylindrical, an inner cavity within said vial, said inner cavity being curved, and orienting means are provided in said outer wall to permit proper orientation and mounting of said vial in the notches in said vial-receiving opening, the inner cavity is curved in a substantially uniform arc having an apex, opposed ends spaced from the apex and opposed spaced sides at an angle of 90 degrees from apex, the apex of the curved inner cavity is closer to the cylindrical outer wall of the vial than the ends of the inner cavity and wherein a plane tangent to said apex is parallel to said rails, the said cavity is substantially uniform in cross section throughout its length, planes tangent to the sides of the cavity are parallel to each other and at right angles to a plane tangent to said apex, one end of

said cavity terminates in an end wall perpendicular to said outer wall, said end wall having inner and outer faces parallel to each other, the other end of said cavity is open and wherein a cap is adapted to close the said open end, said orienting means comprise a pair of keys [extend] extending from and integral with the outer wall of said vial adjacent said open end, said keys extending in opposite directions from each other, said keys adapted to be received in the opposed notches.

21. (Amended) A level as set forth in Claim 20, wherein each of said keys have edge and side walls at right angles to each other, each of said walls having an end edge, said end edges being tangent to the outer wall of the vial with one of said walls being parallel to the plan tangent to the apex of the cavity, said edge and side wall adapted to abut the end and side walls of the notches.

43. (Twice Amended) A method of making a vial having an outer wall and an inner cavity comprising the steps of forming the outer wall in a straight cylindrical configuration, forming the inner cavity of the vial in a curve, said inner cavity and the outer straight cylindrical wall being formed simultaneously, the inner cavity being formed curved in a substantially uniform arc having an apex with opposed ends spaced from the apex and with opposed spaced sides at an angle of 90 degrees from the apex, the apex of the curved inner cavity is formed closer the cylindrical outer wall of the vial than the ends of the inner cavity, the said cavity is formed substantially uniform in cross section throughout its length, planes tangent to the sides of the cavity are formed parallel to each other and at right angles to a plane tangent to said apex, one end of said cavity is formed terminating in an end wall, the other end of said cavity if formed open, a pair of keys are formed extending from the outer wall of said vial adjacent said open end, said keys extending in opposite directions from each other, each of said keys is formed with edge and side walls at right angles to each other, each of said walls having an end edge, said end edges

being tangent to the outer wall of the vial, with one of said walls being parallel to the plane tangent to the apex of the cavity.